

Chapter 12 - The Conditional Use Permit (CUP) Option

The origin of the proposed changes

This chapter provides a descriptive overview of a new ERGS facility layout on the North Site that was negotiated between WEPCO and the city of Oak Creek in May 2003. This new site layout, referred to as the Conditional Use Permit (CUP) Option was briefly described in WEPCO's direct testimony for the CPCN hearing which was received by the PSC and DNR in late May after the completion and issuance of the draft EIS. WEPCO testifies that this alternative was negotiated to satisfy community concerns regarding potential fugitive dust emissions from the coal storage and handling areas and aesthetic concerns surrounding the two proposed chimneys.

Based on WEPCO's testimony, PSC and DNR staff requested additional information and maps in order to evaluate the environmental and social effects of the new site layout. This information was provided in mid- to late-June, 2003. Agency staff, however, has not been able to perform a thorough environmental review of this site layout due to incomplete information, the lateness of the information submitted and continuing project design changes. The following sections of this chapter are based on the best information available at the time of review.

There is no "CUP" Option for either of the South Sites. Therefore, if the Commission approves one or more units of the ERGS and selects a South Site or if it selects the North Site with the original layout, the changes associated with the CUP Option would not occur.

Description of the proposed CUP Option layout - differences from the original North Site layout

The areas needed for construction of the ERGS using the CUP Option are located mostly on WEPCO's property, but would extend partially onto the federally-owned shooting range property, resulting in the need to relocate that facility. The proposed ERGS facility layout for the CUP Option is shown in Figure Vol. 2-4.

The CUP Option differs from the original North Site layout in the following ways:

- Two coal storage/handling areas, a coal pile runoff basin, a coal storage building, and a new road wrapping around the north side of the coal storage building would be constructed inside the train

loop. Under the original North site layout, these facilities were located north of Elm Road. The relocation of the coal storage and handling areas increases the distance between the coal piles and the nearest residence from about 1,200 feet to approximately 2,800 feet.

- Berms just south of Elm Road near Haas Park would be enlarged and reconfigured to some extent, with a resulting wavy edge effect. This would be intended to further shield the view of ERGS facilities from residents in the Barton Oaks subdivision. In addition, new berms would be built as a border around the new shooting range which would be moved to a former horse farm property on the north side of Seven Mile Road and adjacent to Lake Michigan (see discussion below).
- A different Main Access Road and a new Southern Access Road are proposed. The Main Access Road would enter the site from STH 32, north of Botting Road, travel easterly across the UP railroad and connect to the SCPC units, a visitor center, parking at the north ash disposal area, and a future ERGS employee parking lot. The Southern Access Road would also enter the property from STH 32, but at a point south of the Caledonia Ash Landfill. It would traverse the southern edge of the landfill to a bridge crossing the UP railroad tracks, and then follow an existing rail spur road to the east where it would split to provide access for employee parking and allow for deliveries and ash hauling.

The original North Site layout was changed after the draft EIS. The layout as described in this final EIS includes building a new access road into the site from STH 32 across from Botting Road, with a second access road located about 500 feet further south. Following construction, the portion of Elm Road east of the UP rail tracks would be closed, and all construction and operational traffic would use the STH 32 access. Access to the site for fishing would be provided by extending Oakwood Road to the south along the lakeshore. Oakwood Road is currently a dead-end road. The proposed recreational trail would probably also access Bender Park from the end of Oakwood Road under any scenario.

- The existing 138/345 kV substation that connects the OCCP units to the electric transmission system is currently located inside the curved rail track directly south of the Oak Creek Power Plant Woods. Under the CUP Option, it would be split into two separate switchyards and relocated along with the existing transmission line connections. The 138 kV switchyard and related transmission lines would be moved to a location west of the UP rail tracks directly south of the closed South Oak Creek Ash Landfill. The 345 kV switchyard would be expanded substantially (it would increase in size by about 40 percent) and relocated to an area south of the proposed rail loop that is currently an Isolated Natural Resource Area on the western edge of the shooting range property. Connections from all of the new ERGS units would be routed through the 345 kV switchyard. Preliminary estimates of the cost to split the switchyards and relocate them are in the range of \$20-\$40 million. The original North Site layout proposes to slightly expand the 138/345 kV substation within the rail loop, but not to relocate these facilities.
- The number and height of chimney stacks associated with the SCPC units would be reduced from two stacks, each at 675 feet tall (the original North Site design), to one stack at 550 feet tall for the CUP Option.

In early July, agency environmental staff became aware of proposed new ash haul roads and an “ash reburn building” that had not been described in the CPCN application, WEPCO’s testimony or any subsequent information filings. The ash haul roads are not shown on any map that was provided for environmental analyses purposes and the ash reburn building appears on several maps, but at different locations on different

maps. At the time of the final EIS preparation, it is unclear if these new haul roads and building are associated with the CUP Option or would be built to accommodate use of the North Site under either the CUP Option layout or the original site layout.

Shooting range

Use of the CUP Option on the North Site would result in the need to move and rebuild the shooting range which is currently located within WEPCO's property, south of the Oak Creek units 5-8. A new shooting range would be constructed further south on the north side of Seven Mile Road on a property that was previously a horse farm. The new shooting range has not yet been designed; however, any new shooting range would be designed to meet military safety standards in order to eliminate any danger from stray rounds. Noise would be somewhat reduced by the standard safety design features. The shooting range would be used only for small arms (pistols and rifles) target practice. The range is presently used by local gun enthusiasts, law enforcement agencies, military reserve units, and the National Guard.

Berms, trees and other landscape features may serve to reduce audible noise generated at the shooting range. However, some noise impact would likely be experienced at the closest residences which include the four houses directly east of the railroad corridor north of Seven Mile Road, the homes between STH 32 and the railroad on the south side of Seven Mile Road, and the home at the east end of Seven Mile Road.

Potential Environmental and Social Effects of the CUP Option

Topography and Soils

Chapter 10 includes a detailed description of the existing geology, topography, and soils on WEPCO's property. The topography of the existing landscape is shown in Figure Vol. 2-11.

The topographical changes related to the CUP Option would differ from those associated with the original North Site layout proposed in WEPCO's CPCN application. According to the applicants, the CUP Option would require somewhat less soil to be removed for the SCPC units. WEPCO has indicated that a total of about 7.4 million cubic yards would need to be excavated for the CUP Option as compared to about 9.9 million cubic yards for the original North Site layout. However, the information supplied for the CUP Option does not include about 1.0 million cubic yards of dredged soils that are included in the North Site totals and it states that less material would need to be excavated for the water intake tunnel. Also, the amount of soil excavated for building roads decreases dramatically for the CUP Option, even though WEPCO has proposed to build more miles of roads for site access and ash hauling under the CUP Option, than it proposed for the original North Site layout. These discrepancies have not been explained.

Large amounts of soil excavation, transport, and deposition would still occur. Soil from the excavated areas would be used to create new berms or be placed in soil deposition areas at various points around the site. Some of the berms would be located and shaped differently from those described for the North Site. (See Figure Vol. 2-20.) These changes include:

- The berms north of Elm Road would be shifted slightly south and westward toward the existing North Oak Creek landfill. They would have wavy edges and be a few feet higher.
- Near Elm Road, the berm would be limited to the South Oak Creek Landfill and the area east of the wetland and park. The highest point is still expected to be about 770 feet above msl, but the berm would be laid out in tiers increasing in elevation from the southeast corner of the landfill to the north and northwest.
- A bank of soil would be built up near the southern end of the rail loop for the purpose of (1) bringing a new road from the north up to grade with the existing truck road from OCPP Units 5 - 8 and (2) elevating the existing road to the south to create an overpass over the UP railroad line.
- An additional embankment would be built on the west side of the tracks to complete the bridge and connect the east side of the property with a road running along the south edge of the Caledonia Ash Landfill. Another small embankment would be created to bring the new road up to grade where it joins STH 32. The bridge embankments to enable spanning the railway would be at least 40 to 50 feet above the existing grade when the bridge was complete.

Excavation work would be required not only for the SCPC units but also for the relocated 345 kV switchyard that would be moved southeast of the existing WEPCO rail loop. The switchyard construction would require excavation of some of the western portion of the shooting range property berms. Excavation of this material would probably require remediation work for hazardous wastes as described in Chapter 9.

The locations and shapes of the soil repositories differ for the original North Site layout and the CUP Option. As discussed in Chapter 10 and shown in Figures Vol. 2-12 and Vol. 2-13, the North Site soil repositories would consist of: (1) berms to the north; (2) an addition to the height of the North Oak Creek and South Oak Creek Landfills; (3) an area on the west side of the property, south of the existing electric transmission corridor; (4) an area along the east side of the rail line inside the rail loop; and (5) a berm on the southwest corner of the property on existing agricultural land.

For the CUP Option, in addition to the newly-designed berms and North and South Oak Creek Landfill repositories and the embankment for the south side bridge, WEPCO would build berms around a large, irregularly shaped area in the southeastern corner of the property that would be developed as the new shooting range. The shooting range and berms would be placed on existing agricultural land south of the Power Plant Ravine Woods Natural Area, which is described in Chapter 10. WEPCO has not indicated the amount of soil that would be deposited in berms in this location, nor the expected height of the berms. It also does not yet appear to have designed the roadways needed to transfer the soil to this location.

In addition to the changes in excavation and stockpiling, the relocation of the inactive coal piles inside the rail loop would potentially affect a large EADA on the east side of the rail line (See Figure 9-3 for EADA locations). Adding the coal piles over the early ash deposits would require some remediation work to avoid adverse impacts to the local groundwater. See Chapter 9 for potential remediation work related to the EADAs.

As indicated in later sections of this chapter, new soil deposition areas associated with the CUP Option would affect some wetlands, woodlands, and SEWRPC-designated biological areas.

Air emissions

Pollution source descriptions

The sources of air pollutant emissions from the proposed ERGS are included in WEPCO's PSD construction permit application for the North Site and additional information submitted to the DNR on June 2, 2003 and June 27, 2003.

There are several differences between the pollution sources for the original ERGS layout at the North Site and using the CUP Option at the North Site. For the CUP Option, the coal storage and handling areas would be within the train rail loop. There would be one 550-foot tall chimney rather than two 675-foot chimneys for the SCPC boilers. There would also be minor changes to the material handling systems, including locations, stack heights, and flow rates for certain dust collection systems. The total fuel heat input for the proposed SCPC Auxiliary Boiler would be set not to exceed 498,000 MMBtu per year, of which no more than 122,500 MMBtu per year could be from the combustion of distillate fuel oil.

The actual emission sources included in the CUP Option permit application are the same as those listed for the North Site in Chapter 7:

- Two 615 megawatt (MW) supercritical pulverized coal (SCPC) electric generating units
- One 600 MW integrated gasification combined cycle (IGCC) unit
- Two auxiliary boilers
- Two emergency diesel generators each 1,500 kW
- Three diesel fire pumps
- Fuel storage tanks
- Coal handling and other material handling equipment

Ash haul routes and ash reburn building

WEPCO's June 2, 2003 submittal for its air permit application, for air pollution modeling purposes, indicated that new ash haul roads would be constructed to move ash by-products from the SCPC units built on the North Site to the Caledonia Landfill or off-site. It is uncertain if these new roads would serve the SCPC units for both the CUP Option and the original layout or only the CUP Option. No design details for the new ash haul roads or maps showing the location of these new roads and their relation to landscape features were provided.

The air permit information submitted on June 2, 2003 also indicates that there would be new roads from the ash landfills to an ash reburn building. No description of the location of the ash reburn building or the roads leading to it from the landfills, or the building dimensions or design were provided by the applicants.

The ash haul roads and the ash reburn building are facilities that could potentially impact additional wetlands on-site or biological areas of importance, such as PECs, INRAs, or CSH areas. In addition, there likely would be noise and fugitive dust associated with the new roads. Because these facilities were mentioned only in air permit application information submitted in June, PSC and DNR environmental staff were unable to assess the potential environmental effects of these facilities.

Expected project emissions

Potential emissions from the proposed project are estimated based on worst-case operating scenarios, taking into account control equipment and federally enforceable conditions expected to be in the power plant's permit. The potential annual emissions expected by WEPCO if the ERGS were built using the CUP configuration are identical to the emissions WEPCO projected for the original North Site layout, as shown in Table 7-8 in Chapter 7 of this EIS.¹²⁷

Ammonia is included in Table 7-8. Ammonia is a pollutant regulated under NR 445. It is discussed along with other expected toxic pollutant emissions later in this chapter. The estimate of potential SCPC boiler ammonia emissions is based on a proposed SCR emission rate of 5 ppm dry volume (ppmdv).

The net changes in emissions compared to PSD significance levels are also identical with those projected by WEPCO for the North Site (see Table 7-9).

If any of a project's emission increases are greater than the PSD significance level, the project qualifies as a major pollutant source. Based on Table 7-9, the ERGS using the CUP configuration is classified as a major source under both the operation permits program in Wis. Adm. Code ch. NR 407, and the New Source Review programs under Wis. Adm. Code chs. NR 405 and NR 408 and is subject to PSD review.

If the project would result in an emission increase of any pollutant at a level that is greater than the PSD significance level, the project is subject to PSD review for that pollutant. CO, PM, PM₁₀, SO₂, sulfuric acid mist, NO_x, Pb, Hg, Be, and HF would all be emitted in quantities in excess of the PSD significant levels under Wis. Admin. Code § NR 405.02(27)(a), Table A. As a result, these pollutants are subject to PSD review, and thus also to the control technology review requirements of Wis. Admin. Code § NR 405.08.

Table 7-9 shows that VOC emissions would be subject to non-attainment New Source Review under Wis. Admin. Code ch. NR 408, and subject to the lowest achievable emission rate (LAER) control technology. NR 408 also requires WEPCO to obtain VOC emissions offsets for the potential VOC emissions from this project at a rate of 1.3 to 1.

Proposed BACT

The top down BACT approach to selecting control technologies was utilized by WEPCO for the numerous potential emission sources in the CUP Option. BACT is still being assessed by the DNR.

WEPCO's proposed BACT controls and projected emission limits for each potential project emissions sources are identical to those proposed for the North Site original layout and are summarized in the tables in Appendix D. The data in these BACT tables is also based on WEPCO's permit application and additional information submitted on June 27, 2003 and does not reflect DNR analysis, which is still in progress. It is subject to change pending DNR's further review and analyses. Table 7-12 summarizes WEPCO's proposed BACT and emission limits for the different pollution emission sources of the ERGS at the North Site and the CUP configuration. The emissions sources include boilers, engines, and materials handling systems.

¹²⁷ This data is subject to change pending DNR's further review and analysis.

The proposed BACT for ash trucks on haul roads to and from the Caledonia Landfill is also based on WEPCO's permit application materials and is subject to change pending DNR's further review and analysis.¹²⁸ BACT would involve the use of paved roads with new technology vacuum street sweepers as mitigative controls. The frequency of the vacuum street sweeping would be twice daily or whenever visible emissions from the haul roads are observed by trained personnel.

Air quality impacts - construction phase

Chapter 7 includes a brief discussion of expected air quality impacts during construction of the plant and the protections that would be put in place to control and regulate them. These impacts, controls, and regulations would be the same for each site and for the CUP Option.

Air quality impacts - plant operation

To assess pollutant-specific impacts, the maximum predicted impact for each air pollutant is added to the respective background ambient air concentrations to determine worst-case concentrations. These worst case concentrations are then compared to NAAQS. The last two lines in each table indicate the distances of the greatest air pollution impact from the sources.

Air modeling is being performed at the DNR to determine the maximum predicted impact relative to the NAAQS and to the allowable PSD increments. The resulting DNR Air Pollution Control permit would establish the PSD baseline for the area.

Comparisons with the NAAQS and to the PSD increment are shown in the tables in Appendix D. These tables include cumulative impacts and cumulative percentages of increment consumed. They differ from the tables for the North Site because of the change to a single, shorter SCPC exhaust stack and other equipment arrangements. The information in them is based on WEPCO's air pollution control permit application additional information submitted on June 2, 2003 and June 27, 2003. The data is subject to change pending DNR's further review and analysis.

A portion of the results shown in Appendix D are contained in Table 12-1.

Table 12-1 Air quality and PSD modeling results for the ERGS using the Cup Option at the North Site

Pollutant	PM₁₀ 24-hour	PM₁₀ Annual	TSP 24-hour	Pb Calendar Quarter	SO₂ 3-hour	SO₂ 24- hour	SO₂ Annual	NO₂ Annual
Background concentration (ug/m3)	58	27	76	NA	208.10	57.80	9.30	31.00
Background plus ERGS concentration (ug/m3)	122.36	34.82	142.48	0.00	763.81	197.04	15.22	60.63

¹²⁸ In its June 2, 2003 air permit submittal, WEPCO changed the on-site haul road routes along with its other plant layout changes. The new routes would be different from those mapped in Figure 9-2 in Chapter 9.

Pollutant	PM ₁₀ 24-hour	PM ₁₀ Annual	TSP 24-hour	Pb Calendar Quarter	SO ₂ 3-hour	SO ₂ 24- hour	SO ₂ Annual	NO ₂ Annual
NAAQS standard (ug/m3)	150	50	150	1.5	1,300	365	80	100
Percent of NAAQS	81.6%	69.6%	94.99%	-	58.8%	53.9%	19.0%	60.63%
PSD Class II Increment Concentration (ug/m3)	30	17	-	-	512	91	20	25
Maximum Elm Road Project Only Concentration (ug/m3)	25.03	5.40	-	-	228.56	69.34	5.20	1.30
Percent of Class II Increment	83.4%	31.8%	-	-	44.6%	76.2%	26%	5.2%

Table 12-1, containing WEPCO's modeling results, shows that the concentrations from the proposed ERGS using the CUP Option would be below the standard level of pollution allowed for the region, although the concentration of TSP would come very close to 100 percent of the standard. Most of the expected increment would be consumed by the ERGS for 24-hour PM₁₀ and 24-hour SO₂ concentrations. Other pollutant concentrations would consume less of the increment.

Hazardous air pollutants

The primary fuel for the ERGS generation boilers would be a blend of 95 percent washed bituminous coal and 5 percent coal ash (on a weight basis). A variety of fuel ashes have been analyzed. The analyses demonstrate that the fuel ash meets the definition of lignite coal as found in Wis. Admin. Code § NR 400.02 (22e). For this reason, the fuel ash is exempt from review under the hazardous air pollutant rule, Wis. Admin. Code ch. NR 445.

The emissions of HAPs from the combustion of natural gas and fuel oil are also exempt from NR 445 requirements because these fuels are considered virgin fossil fuel.

However, as confirmed by Table 12-2 below, due to the emission levels of hydrogen chloride and the total projected HAPs emissions from the facility, the HAPs from the ERGS sources are subject to MACT. The case of mercury emissions applies as well, subject to the PSD program under Wis. Admin. Code ch. NR 405.

HAPs emissions estimates

HAPs emissions projections appear to be the same for the CUP Option as for the original North Site layout. Tables D-31 through D-37 in Appendix D summarize the HAPs emissions expected from the different emission sources. These emissions levels are based on WEPCO's calculations in its air permit application and additional information submitted on June 2, 2003 and June 27, 2003. This data is subject to change pending DNR's review and analysis. The SCPC units would be burning bituminous coal. The SCPC and IGCC auxiliary boilers would burn either natural gas or diesel fuel oil. WEPCO has elected to limit firing

natural gas to 1,500 hours per year and fuel oil to 500 hours per year. The IGCC unit would gasify bituminous coal and burn the syngas that is produced. The associated equipment that would produce sulfuric acid as a by-product of the IGCC operation is anticipated to emit the criteria pollutant emissions of nitrogen oxides, sulfur dioxide and sulfuric acid mist.

Table 12-2 provides a summary of the estimated potential emissions of hazardous air pollutants from major emissions sources. The summary table does not include consideration of fugitive coal dust and other dust.

Table 12-2 Hazardous air pollutants emissions from the major components of the ERGS in tons per year

Hazardous Air Pollutant	SCPC Unit 1	SCPC Unit 2	IGCC	SCPC Auxiliary Boiler	Diesel Generator	Fire Pump	IGCC Auxiliary Boiler
Antimony	0.091	0.091	0.021	Negligible	Negligible	Negligible	negligible
Arsenic	0.164	0.164	0.490	0.0000	0.00003	0.00001	0.0001
Beryllium	0.009	0.009	0.025	0.000	0.00000	0.00000	0.0001
Cadmium	0.030	0.030	0.018	0.0000	0.00001	0.00000	0.0000
Chromium	0.239	0.239	0.310	0.001	0.00004	0.00001	0.0002
Cobalt	0.038	0.038	0.119	0.002	0.00023	0.00008	0.0008
Lead	0.202	0.202	0.501	0.001	0.00006	0.00002	0.0002
Manganese	0.332	0.332	0.585	0.001	0.00010	0.00004	0.0004
Mercury	0.062	0.062	0.0329	0.0002	0.00000	0.00000	0.0001
Nickel	0.226	0.226	0.334	0.044	0.00504	0.00182	0.0178
Selenium	1.328	1.328	0.254	0.0010	0.00001	0.00001	0.0001
Hydrogen Chloride	69.360	69.360	2.946	0.145	0.01683	0.00608	0.0587
Hydrogen Fluoride	23.930	23.930	0.520	0.007	0.00078	0.00028	0.0027
Formaldehyde	0.130	0.130	2.886	0.015	0.00056	0.00303	0.0060
Organic HAPs	0.002	0.002	0.261	0.018	0.00100	0.00145	0.0073
Totals	96.1	96.1	9.30	0.23	0.0060	0.0045	0.094

Table 12-2 shows that the total potential emissions of HAPs from the ERGS are estimated at over 200 tpy. A major source would be a new process or production unit which in and of itself emits or has the potential to emit 10 tons per year of any individual HAP or 25 tons per year of any combination of any HAPs. Thus, the proposed ERGS project is subject to case-by-case MACT requirements for HAPs.

Case-by-case MACT for the CUP would be identical to the case-by-case MACT for the other three site options. Table 7-18 in Chapter 7 summarizes the case-by-case MACT proposed by WEPCO. The HAPs are aggregated into different types depending on their chemistry: inorganic solid HAPs, inorganic acid HAPs, organic HAPs, and mercury. The information in the table is based on WEPCO's air permit application information and additional information submitted on June 2, 2003 and June 27, 2003. The data is subject to change pending DNR's review and analysis.

Ammonia under NR 445

Ammonia emissions are expected from the use of SCR at the SCPC boilers, regardless of the power plant site. Ammonia is regulated under Table 1 of Wis. Admin. Code ch. NR 445. For ammonia, compliance with an acceptable ambient air concentration established by rule is required.

The SCPC boilers may emit ammonia in excess of the threshold value, so NR 445 requires that dispersion modeling be performed to demonstrate that the maximum ambient concentrations of ammonia do not exceed 2.4 percent of the threshold limit value (TLV) established by the American Conference of Governmental and Industrial Hygienists (ACGIH). The data in the WEPCO air permit application materials is subject to change depending on the DNR's review and analysis. Based on WEPCO's modeling results, the ERGS would meet the ambient air standards required under NR 445 for ammonia using the CUP Option as well as the other site layouts.

Modified On-shore Facilities and Potential Impacts on Wetlands and Streams

The changes to the North Site due to the CUP Option would not significantly change the type or amount of wetland impacts. The estimate provided in WEPCO's testimony, which has not been verified, indicates that 19.51 acres of wetland would be filled for the CUP option as opposed to 18.78 acres in the original North Site layout.

Table 12-3 Acres of wetland filled for proposed CUP and North Site alternative

	Estimated wetland acres filled	Percentage of wetland acres filled
North Site	18.78	22.5
North Site CUP	19.51	23.8

The CUP Option includes the relocation of the coal storage areas, switchyards, and access roads. The movement of the coal storage and handling areas to within the train rail loop would not significantly alter the project's impacts on wetlands. However, the construction of a switchyard south of the rail loop would affect a wetland that was not impacted by the original site layout and it would also completely destroy an INRA and an area designated as CSH that would not have been impacted previously. In addition, maps provided for the CUP Option show turning structures for two 345 kV lines placed with a wetland in another INRA.

The most significant wetland impacts related to the CUP Option layout would be due to the newly proposed Southern Access Road. The proposed road would enter WEPCO's property from STH 32, and run along the southern edge of the existing Caledonia Ash Landfill to a proposed bridge that would cross the UP railroad tracks south of the rail loop. The new road would then follow an existing rail spur road. The road would split to provide access to the new 345 kV switchyard and to the OCPP employee parking area, delivery route, and ash haul roads.

This new access road would require four additional wetlands to be partially filled. One of the impacted wetlands is a 38-acre shallow marsh comprised of 100 percent wetland or facultative wetland plant species and a low percentage (13 percent) of alien or non-native plants. A branch of the Rifle Range tributary flows through this wetland. A majority of this wetland, which is located within an INRA and adjacent to a CSH area, would be filled. The remainder of the wetland would experience secondary impacts as a result of the construction. Secondary impacts would include changes to the area hydrology, impacts to water quality, wildlife habitat, and the introduction or enhancement of non-native or invasive species. The footprint of

the new access road would interfere with the existing waterway flowing through the 38-acre wetland requiring either the placement of a culvert or the relocation of the waterway.

The applicants have been inconsistent with respect to the possibility of locating a future wallboard facility on its property. None of the maps provided for the CUP Option show a potential location for this plant, whereas all of the maps submitted for the original North Site layout and the two South Site layouts included the wallboard facility. Thus, the estimates for wetland impact provided in the draft and final EIS for the three original layouts may be high if the original sites and the CUP Option are evaluated on a consistent basis.

New and Modified On-shore Facilities and Potential Impacts to Biological Areas

As discussed in Chapter 10, two Primary Environmental Corridors, nine CSH areas, six INRAs, and the Ravine Woods Natural Area were identified by SWRPC in a recent survey of WEPCO's property.

Impacts on these designated biological areas would be different if the CUP Option were used rather than the original North Site layout. Potentially impacted biological areas are shown in Figure Vol. 2-20. for the CUP Option and Figure Vol. 2-14 for the original North Site layout.

The Power Plant Ravine Woods would not be directly affected by the CUP Option.¹²⁹

PECs

The SCPC and IGCC buildings and construction area would still potentially eliminate a large portion of the north PEC along the lakeshore including bluff/beach, grasslands, old fields, wetlands, and woodland areas. The excavations for the buildings would account for the majority of PEC impacts. The disturbance to and loss of PEC areas on-site due to facility construction would fragment the existing PEC along the lakeshore which extends north beyond WEPCO's property boundaries

The new coal piles would be located inside the new rail loop, where they would not have a direct effect on PECs.

INRA/CSH areas

Because most of the identified INRAs contain CSH areas within their boundaries, these two types of special areas will be covered together in this discussion.

Two INRA/CSH areas at the south end of the rail loop, the Wood Duck Woods and the WEPCO Oak Woods, would be affected by the relocation of the 345 kV switchyard and building the new southern entrance road causeway. As described under the Wetlands section of this chapter, the Wood Duck Woods would be partially removed by creating a road causeway that parallels the rail loop and leads to the existing field road and the proposed bridge over the main UP rail tracks.

¹²⁹ It also would not be affected by the original North Site layout if the future wallboard facility were omitted as it has been from the CUP layout.

The new substation location would require a redesign of on-site transmission lines. A new set of lines would also be installed through these woods, with large turning structures located in the central portion of the CSH. The eastern half of the CSH would probably be removed. The WEPCO Oak Woods would be completely obliterated by construction of the switchyard and related transmission structures, and the fill needed to build the road bridge over the railway. The wildlife habitat discussion below describes potential impacts of the removal of this CSH.

The CSH inside the existing WEPCO rail loop, the Oak Creek Power Plant Woods, would remain in place, but the northernmost coal storage would be located directly south of it. Although the active coal pile would be enclosed, winds from the southeast could potentially blow coal dust from the piles or handling facilities into this CSH, with potential negative effects on the vegetation there. Runoff from the coal storage could adversely affect the area also. Design of the storm water system would be important to avoid coal pile runoff into this mature beech/maple woodland. As discussed in Chapter 10, the woodland includes large diameter trees and a state-endangered goldenrod species.

The WEPCO Woods INRA/CSH on the western side of the property could be affected by the installation of new north-south running transmission lines west of the Caledonia Landfill. The transmission lines would require clearing a swath of trees through the woods for rights-of-way. Another INRA located directly west of the rail loop has already been disturbed by existing transmission lines. Under the CUP Option it appears that each of the existing lines and rights-of-way would be expanded, thereby disturbing a greater area of this habitat resource.

Vegetation

Most of the major changes in vegetation are described earlier under the section titled Designated Biological Areas. However, other notable vegetation communities could also be adversely affected.

As described in Chapter 10, most if not all of the existing vegetation near the bluff and lake would be removed in the area of the North Site SCPC units (as shown in Figure Vol. 2-20) for the excavation of the bluff and other land clearing activities required to provide space for them. At least half of the upland meadow south of Elm Road would be removed.

Woodland

Railroad expansion and related construction would still affect the northern and eastern portions of the Oak Creek Power Plant Woods discussed above.

Old field

Existing old field habitat south of the Oak Creek Power Plant Woods would be covered by the relocated coal piles. South of the old field community, the land is more disturbed.

Grassland

Regardless of the site selected for the ERGS, the grassland areas on the North and South Oak Creek Ash Landfills would be disturbed during construction by using them as soil repositories. Thus, the CUP Option would also result in the removal of this grassland habitat either permanently or temporarily. As discussed in Chapter 10, vegetation similar to that now present on the closed landfills may eventually be established on the stockpiles, and re-established on top of the closed landfills after soil stock-piling is ended. However,

mining buried ash from these landfills for reburning in the new ERGS facilities, could prevent establishment of a grassland cover crop for many years.

At the southern end of WEPCO's property, the land north of Seven Mile Road that is currently in crops and pasture would be modified to accommodate the newly relocated shooting range. Tall berms would be built around the perimeter of the new shooting ranges using soils from the lake bluff excavations. Stockpiling soil to create these berms would take the land out of agricultural production and eventually replace it with an elevated grassland.

Impacts to Wildlife Habitat

Coal piles

Two coal separate piles, approximately 13.42 and 14.12-acres in size and both 55 feet high, would be relocated to the inside the existing railroad loop. The 13-acre pile would be on the north side of the loop in old field habitat, next to the Oak Creek Power Plant Woods. The northern coal pile would eliminate a sizeable portion of the old field habitat in the loop. This area provides habitat for a variety of wildlife (refer table 10-2). Species that use the area would be forced to relocate to other portions of WEPCO's property or off-site. The remaining old field habitat would be used sparingly by wildlife due to its smaller size and an increase in human activities in the area (e.g., trucks, heavy equipment, etc.).

Another potential impact from this coal pile would be contaminated runoff during rainfalls. Runoff from the piles could infiltrate into the old field and woodland areas affecting the land and water. Runoff impacts could include degradation of vegetation quality which wildlife rely on for food, cover or nesting/dens. Loss of one of these resources could force a particular individual/species to relocate to find that resource.

The northern coal pile would be located next to the Oak Creek Power Plant Woods. Dust from the coal pile has the potential to negatively affect the woodland vegetation and wildlife species using the area. Coal dust would cover leaves impairing plant development and growth, negatively affecting wildlife use of the vegetation (e.g., food, cover, etc.), potentially the woodland area.

The second coal pile would be located in the southern portion of the loop in a disturbed area, near a shallow marsh. From the general information known, the southern coal pile appears to be located in a disturbed area that does not provide quality habitat for wildlife. Placing the pile in this location would not create any direct significant loss of habitat.

Contaminated runoff from the pile has the potential to enter and impact a nearby shallow wetland. The runoff could impact the water quality of the wetland affecting several aspects of wetland life - aquatic plant growth, aquatic insects and wildlife development (e.g., frog eggs, etc.). Changes in any of these aspects would have the potential to force wildlife species to relocate, affect health of individual wildlife species, or cause a decrease reproductive success.

Coal dust has the potential to affect plant growth in the wetland. The dust would cover the plants impairing plant development and growth, negatively affecting its use by wildlife for food, cover or nesting/dens.

Archeology and historic properties

Wisconsin law -- protection of listed sites

As discussed in the corresponding section of Chapter 10, the eight archeological sites listed with the WHS on WEPCO's property were determined to be unlikely to be disturbed by constructing the ERGS facilities on the North Site, the South Site, or the South Site Exp. Three listed sites were surveyed in 2002 by a qualified archeologist, who determined, based on their condition and history, that it was unlikely that they would be disturbed. The other five were determined by staff to be out of the way of construction.

Figure Vol. 2-4 (plant equipment layout - CUP Option) shows that one of the five, a cemetery at the northwestern edge of the property, appears to be out of the way of ERGS construction for the CUP Option as well.

The four other sites are located in the southwest corner of the property to the west of the Caledonia Ash Landfill and just south of a SEWRPC-designated INRA. While no major power plant facilities are proposed for that area, according to Figure Vol. 2-4, a transmission line would run north-south along the west side of the rail line between the southernmost transmission corridor leaving the 345 kV switchyard and the existing east-west transmission corridor crossing the railroad. At least one transmission structure would be located in the vicinity of two listed archeological sites there. However, as discussed above and in Chapter 10, these two sites have been determined not to be a concern due to previous disturbance.

Another electric transmission line would run from the 345 kV electric transmission switchyard westward along the south side of the landfill and then northward across the INRA to join the lines in the 138 kV transmission corridor heading west from the plant. From Figure Vol. 2-4, it appears that at least two 345 kV transmission structures would be installed in the area of four archeological sites. However, archeological surveys were performed in 1985 as part of the approval process for the Caledonia Ash Landfill (See Chapter 9). The Wisconsin Historical Society determined that only one contained important information on prehistory or history. That one is a circa-1858 Euro-American cabin-homestead site that is currently being preserved by WEPCO as a result of WHS direction after reviewing the results of the 1985 archeological survey. It would be in the public interest for the protection of this site to continue.

Federal law - surveys to locate and evaluate historic properties

Because the US Army Corps of Engineers has shown an interest in the ERGS project as a whole, the historic properties review under state law will probably be superseded by the requirements of Section 106 of the National Historic Preservation Act. The implementation of Section 106 by the Army Corps could result in the need for more surveys and evaluations to locate, evaluate, and protect if necessary any other historic properties that might exist in the project area before construction on the project begins.

Fugitive Dust Impacts

As described in the draft and final EIS, the impacts related to fugitive coal dust from the coal piles in their original location north of Elm Road is expected to be minimal (see Fugitive Dust section in Chapter 11). Compaction and a chemical surfactant, which forms a hard crust on the surface, would be applied to the

inactive pile to prevent wind erosion. WEPCO proposes to place the active coal pile within an enclosure wherever it is located, in its original location north of Elm Road or within the rail loop. The coal handling system would also include a baghouse to control dust, regardless of location.

Moving the active and inactive coal piles and the associated coal handling equipment to a location inside of the proposed rail loop track under the CUP Option would increase the distance between that potential source of coal dust and the nearest residence from about 1,200 feet to 2,800 feet.

The potential for fugitive dust impacts, on the Barton Oaks residents, that would be caused by vehicle traffic would likely be reduced under the CUP Option due to creation of the new access road off of STH 32, closing Elm Road, and reducing the traffic volume on the new access road off of Oakwood Road.

Noise Impacts

The noise associated with coal handling equipment, bulldozing the coal piles and vehicle traffic would likely be reduced under the CUP Option for residents of the Barton Oaks subdivision as compared to the original North Site layout or the South Sites. Other noise sources and volumes, such as for the excavation and transport of soils to deposition sites, plant operational noise, and noise associated with trains would not change under the CUP Option.

The deposition of large amounts of soil around and on the South and North Oak Creek Ash Landfill areas would still result in substantial traffic and noise from trucks and bulldozing equipment in the general vicinity of the Barton Oaks neighborhood for the duration of the excavation and soil stockpiling activities. The proposed berm reconfiguration north and west of the SCPC units would entail more work closer to residences than the original layout.

Relocation of the shooting range from its present location, within WEPCO's property, to an area adjacent to Seven Mile Road and Lake Michigan, could increase noise levels for residents along that road and in subdivisions near Six Mile Road along the lake.

Traffic Impacts

Shifting the major construction traffic that would enter the site, as well as delivery and maintenance vehicles to a new road further to the south that would be accessed from STH 32, would reduce traffic noise for nearby residents and result in improved safety on Elm Road and better access to nearby Haas Park. Depending on the speed and volume of traffic moving on STH 32, a large number of vehicles entering and leaving the plant could create a safety hazard for cars traveling on STH 32.

As mentioned above, the soil excavation and stockpiling activities would cause the same amount or more traffic and noise as construction using the original North Site layout.

Visual Impacts

New and avoided impacts due to reduced stack height and number

Table 12-4 shows the difference in heights of the different SCPC proposals. The diameter of the proposed stacks would also increase over the existing stacks, by about 15 feet for each stack if there are two stacks and about 30 feet if there is one stack.

Table 12-4 Comparison of alternative stack heights

Stack number & height	Existing units 5 & 6*	Existing units 7 & 8*	Original SCPC units 9 & 10 at North Site	CUP SCPC units 9 & 10 at North Site	SCPC units at either South Site
	1 stack 454 feet	1 stack 557 feet	2 stacks 675 feet	1 stack 550 feet	2 stacks 470 feet
Stack diameter	44 feet – 7 in at the base	46 feet at the base	60 feet at the base of each	About 75 feet at the base	60 feet at the base of each

* These stacks would be present under all site layout options

The impact of any view of the stacks from off of WEPCO property is minimal, due to the distance of the view and the landscape features between the viewer and the stacks. The existing electric transmission lines throughout the area surrounding the plant, and the existing LNG tank on Elm Road are much more dominant and intrusive visual features. From the lake, the stacks are more visible, but still distant. Refer to Chapter 11 for photographs of the most prominent views of the existing stacks and for further discussion of aesthetic impacts.

The CUP Option would decrease the aesthetic impacts caused by the presence of the stacks. The difference in width between the existing stacks and the new SCPC stack would not be discernable at the distance involved.

Stack height was not a major aesthetic concern for residents at the public meetings on the draft EIS. However, residents are very concerned about increased air pollutants and how far these pollutants would disperse from the plant. If the DNR air modeling analyses show that the decreased stack height reduces dispersion of air pollutants, then residents near the plant would experience worsened air quality conditions than under the original SCPC proposal.

New and avoided impacts due to coal pile relocations

The relocation of the coal piles and coal handling facilities would probably not change the aesthetics of these features, as seen from residences surrounding WEPCO's property. Although the reserve and active coal piles would be moved to a location about 2,800 feet away from the nearest house in the Barton Oaks subdivision, some existing woods and line of trees along the eastern edge of the subdivision already partially blocks the view of facilities across the UP tracks. Also, the original North Site layout includes several berms that are intended to shield the view of the coal piles.

The change in location of the coal piles could increase visual impacts due to the resultant split in the switchyard. This split would create two switchyards, one of which would be placed in a new location that is

closer to WEPCO's western property boundary than the existing switchyard. This split would require a major expansion of facilities (40 percent greater than for the original proposal). The electric transmission lines that connect to these switching facilities would also be relocated.

Under the CUP alternative, a new 138 kV switchyard would be located west of the railroad tracks and could be visible to traffic along STH 32. A new 345 kV switchyard, located further south, might be visible from one or more of the four houses located closest to the south or from Seven Mile Road, especially when the sun reflects off the metal equipment and supporting structures of the switchyard. A switchyard is a very industrial looking facility. WEPCO's original North Site proposal includes a berm to screen the existing switchyard from the west, but the CUP alternative appears to include no screening berms for the two new switchyards.

Under the CUP Option, the rifle range would be moved south due to the location of the new 345 kV switchyard. This would increase the visual impact of this range on the residents closest to WEPCO's property on the south side.

New and avoided impacts due to access road changes

WEPCO has changed its proposed site access roads three times. The arrangement described in this final EIS would include two access roads from STH 32, one across from Botting Road and another about 500 feet to the south of the first. The northernmost access road is shown on maps. WEPCO's plans include a specially landscaped entrance for its access roads, and the possibility of some form of traffic control.

The CUP alternative appears to move the northernmost access road about 350 feet south of the Botting Road entrance on STH 32, and to reserve its use primarily for site visitors. The more southern access road appears to move over 1000 feet south of its originally proposed location, and its primary use would be for deliveries and ash hauling.

It would appear that the CUP alternative attempts to reduce the aesthetic impact of access to the site for the group of houses located along Botting Road west of STH 32. There would be no need for a stoplight at Botting and STH 32, and the greatest amount of traffic would turn off at the southern access road over 1000 feet further south.

New and avoided impacts due to berm changes

The CUP Option appears to reduce the number of berms proposed, and to better define their shape. However, the slopes would appear to be steeper than the slopes for those berms in the original North Site proposal. The CUP Option eliminates the berms proposed west of Haas Park, along WEPCO's northern property boundary, and west of the expanded distribution substation. It shortens the length of the berm along the railroad tracks north of Elm Road, and re-orientes the remaining piece on a diagonal. A new berm would be located further east on a similar diagonal. As a result, there would be two buffers between the southeast corner of the Barton Oaks subdivision and the proposed excavation for the SCPC units.

Aesthetically, the CUP Option may improve screening for the Elm Road area while further alleviating the "close-in" feeling of living close to high hills, by eliminating the berm west of Haas Park and

pushing the berm east of Haas Park further to the east. The elimination of the berms along the rail track and the northern property line may make the plant more visible from the north, but the actual active plant facilities are further from Oakwood due to the change in location of the reserve and active coal piles.

However, the elimination of the berm that screens the expanded distribution substation in WEPCO's proposal is not compensated for in the CUP Option. There appear to be no new berms proposed to screen the two new distribution stations of the CUP proposal.

There are two fewer soil storage areas under the CUP Option. However, this may be offset by the increased amount of soil placed in other stockpile areas. This may be possible due to the apparent increased steepness of the slopes, which could be more difficult to maintain.

The CUP Option shows an on-site bridge for traffic to pass over the UP railroad, however, it's probable that such a bridge is needed under any alternative in order to allow for the continuous dirt hauling that WEPCO plans during the construction period. Without such a bridge, conflict with trains would be a major problem.